Traffic Engineering Guidance
Cannon Air Force Base, New Mexico
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Study Objectives

- To recommend traffic engineering improvements in the vicinity of the Main Gate and at the intersection of Torch and D L Ingram Blvds.
- To recommend improvements to clarify traffic flow at the Shoppette.
- To recommend, as time permits, other improvements to improve motorists' safety and traffic flow.

Observations and Findings

- Cannon AFB is a medium-sized base with a clearly defined grid-street network.
- Base roads are well designed and in average condition. Recent winter weather has deteriorated the surface of several roads, i.e., Olympic Blvd.
- The majority of traffic signs and markings are correctly installed and their design usually meets national standards.
- Although base traffic signal supports, arms, and signal heads are state-of-the-art, the signal controllers do not provide for maximum efficiency.
- During the past 13 months, about seven traffic accidents have occurred per month on base streets and parking lots. Most of these have been caused by inattention during parking and driving too fast for conditions. No single street location or intersection had more than two accidents.

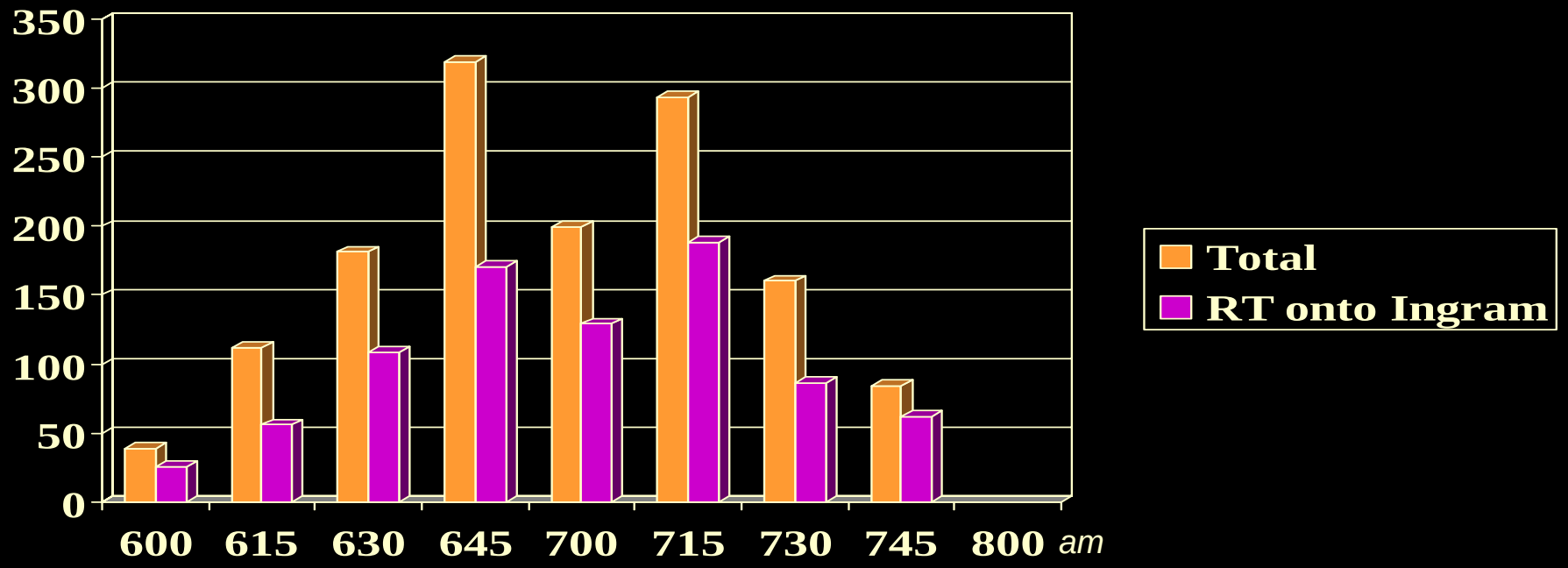
Observations and Findings (cont)

- Traffic flows throughout the day with minimal congestion. The heaviest flows were observed inbound at the Main Gate between 0645-0700 and 0715-0730 hrs and outbound between 1600 and 1645 hrs.
- Security forces personnel are highly efficient in processing inbound motorists during the peak periods.

Inbound traffic during morning peak at the Main Gate

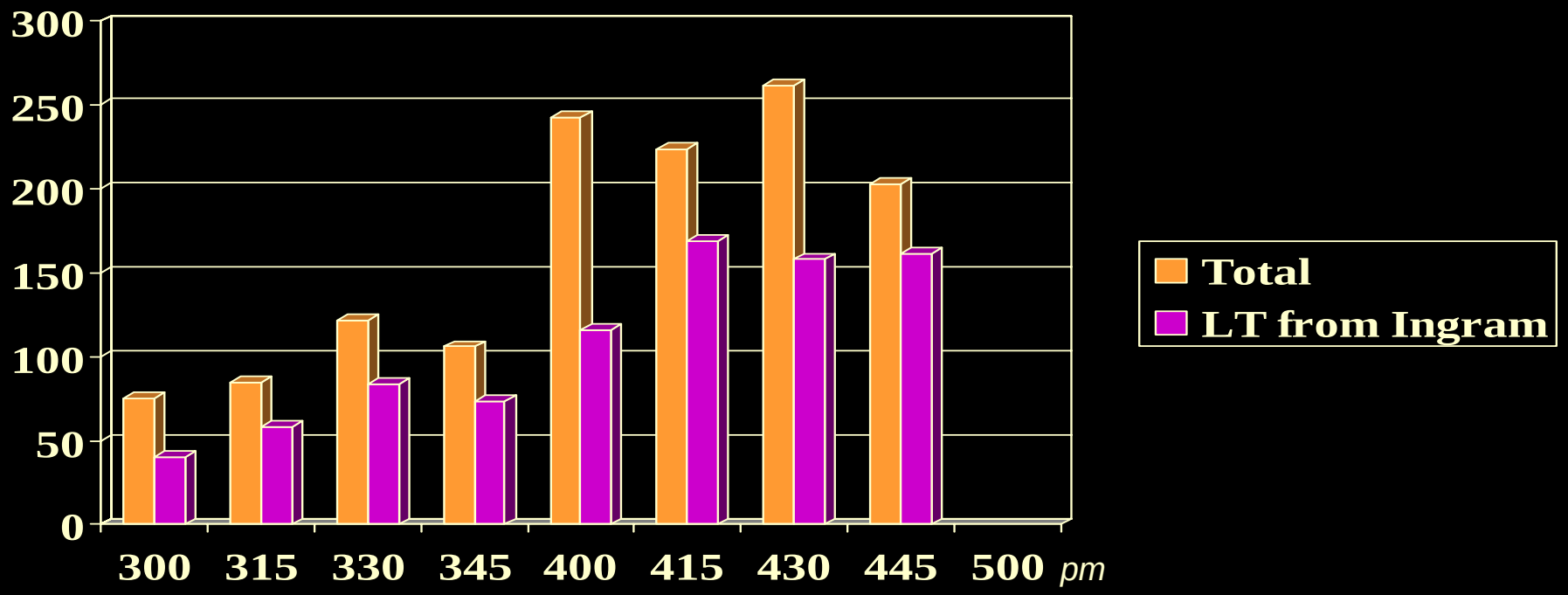
Main Gate Traffic Volumes

Vehicles Inbound - Morning Peak Period



Main Gate Traffic Volumes (cont)

Vehicles Outbound - Evening Peak Period



Conclusions

- The base experiences minimal traffic congestion and accidents.
- Base engineers and planners have done an excellent job of planning and developing installation facilities and roads.
- A good situation can be made even better by correcting several relatively minor problems by the addition and/or adjustment of traffic control devices.
- The existing signal equipment at the intersection of D L Ingram and Torch Blvds operates with great inefficiency.

Recommendations

- **The Shoppette (Bldg 1111)**
  - Clearly delineate the one-way exit flow pattern by installing black-on-white, 36” x 12” rectangular ONE WAY arrow signs (R6-1 in MUTCD*).
  - Separate the Entrance and Exit driveway with a 5”-ft wide tear drop island and install Entrance and Exit signs on the appropriate curbs. When funds become available, construct a parking lot exit directly onto Sextant Ave and make the current driveway an entrance only. This connector can also serve as access to the Taco Bell take-out window.
  - Construct channelization islands and a curb between the parking spaces in the center of the main lot.
  - Eventually relocate the air hose station from the sidewalk in front of the shoppette to a location on the northeast end of the paved area.
  - Add a small sign on each of the first pump islands to read PULL FORWARD TO LAST AVAILABLE PUMP.

** Manual on Uniform Traffic Control Devices, USDoT.*

Recommendations (cont)

No guidance signs at entrance/exit to shoppette

Difficult to see DO NOT ENTER signs at exit from shoppette

Recommendations (cont)

- **Main Gate area, to include intersection of D L Ingram and Torch Blvds.**
  - Install wider red and white striped gate arms with black-on-white, 36”x24” LANE CLOSED signs (similar to R11-2 in MUTCD).
  - Use orange, reflectorized traffic cones to guide inbound motorists into the correct ID check lane(s).
  - Re-mark and sign the southwest leg of the D L Ingram Torch intersection to allow for a free-flowing merge for southwestbound traffic. This requires that the inbound separate right-turn lane be restricted to one lane. Install diamond, black-on-yellow Added Lane signs (W4-3) and paint according to the design sketch provided during out-brief.
  - Cut away a small portion of the median nose on the NW leg to provide a more natural path for vehicles turning left to exit the base.

Recommendations (cont)

Confusing 3-lane approach to Main Gate (which lane is open?)

Recommendations for at Main Gate

Recommendations (cont)

Unclear merge of southwestbound D L Ingram at Torch inbound ramp

Stripping to permit each flow to proceed into separate lane

Recommendations (cont)

- During off peak hours, place the signal on an all red flashing mode.
- As funds become available, replace the fixed-time signal operation with a vehicle activated controller and loops.

Recommendations (cont)

- **Intersection of Torch Blvd and Engineers' Way**
  - Add two signs (NO OUTLET and MAIN GATE) to clarify that Engineers' Way (old Torch Blvd) is no longer the route to Main Gate.
- **Curve at southwest end of Olympic Blvd**
  - Install white delineators along outside curve to emphasize need to reduce speed. (This recommendation applies to several curves on Perimeter Rd.)
- **Curve at southwest end of D L Ingram Blvd at Terminal Ave**
  - Provide a black-on-yellow, diamond Curve sign with speed warning plate (15 MPH) on the southwestbound approach and a large Arrow sign on the southeastbound approach similar to signs currently provided**.**

Recommendations (cont)

Signs needed to clarify that Engineers'Way is a dead end street

Recommendations (cont)

Curve at D L Ingram and Terminal Ave

Curve at southwest end of Olympic Blvd

Recommendations (cont)

- **Liberator Ave near Bldgs 195 and 198.**
  - Remove on-street parking where ample off-street parking is nearby.

Recommendations (cont)

- **Intersection of Torch Blvd and Trident Ave**
  - Remove the Stop signs on the Torch Ave approaches to accommodate the heavier flow of traffic and to encourage more motorists to use Torch Blvd enroute to Main Gate (thus avoiding D L Ingram Blvd, which tends to be more congested and have more accidents). This change will allow motorists to travel non-stop from one end of the base to the other.
- **Intersection of Olympic Blvd and Casablanca Ave**
  - Add a 4-Way plate to the Stop sign on the northwestbound approach of Casablanca Ave. The other three Stop signs have the 4-Way plate attached below them; therefore, this is routine maintenance. A minor failure-to-yield accident recently occurred here and this might have been a contributing factor.

Recommendations (cont)

- **Through base bulletins, e-mail, and flyers…**
  - Encourage base organizations and employees who now report for work at 0700 and 0730 to select an alternate reporting time.
  - Encourage motorists who enter Main Gate in the morning to use the middle check point lane, when opened, if they are going to make a right turn onto Torch Blvd. (This will eliminate unnecessary merging down stream.)

Summary

- Special thanks are extended to Mr. Patrick Sears, Civil Engineer, 27 CE/CECNE, who coordinated this study and provided outstanding support during the field phase.
- Should additional background information be desired or should questions arise related to design details, please contact Whit Mayes at (757) 599-1699, (800) 722-0727, or e-mail *mayesw@tea-emh1.army.mil*.